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Substitute for form 1449A/PTO (Modified)			Complete if Known		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Application Number	To Be Assigned	
			Filing Date	October 29, 2003	
			First Named Inventor	Kayyem	
			Group Art Unit	To Be Assigned	
			Examiner Name	To Be Assigned	
Sheet	1	of	11	Attorney Docket Number	A-674992-2/RFT/RMS/RMK

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	U.S. Patent Document Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
<i>m</i>	A1	4,704,193	11-03-1987	Bowers et al.	
	A2	4,707,352	11-17-1987	Stavrianopoulos	
	A3	4,707,440	11-17-1987	Stavrianopoulos	
	A4	4,711,955	12-08-1987	Ward et al.	
	A5	4,755,458	07-05-1988	Rabbani et al.	
	A6	4,787,963	11-29-1988	MacConnell	
	A7	4,840,893	06-20-1989	Hill et al.	
	A8	4,849,513	07-18-1989	Smith et al.	
	A9	4,868,103	09-19-1989	Stavrianopoulos et al.	
	A10	4,894,325	01-16-1990	Englehardt et al.	
	A11	4,943,523	07-24-1990	Stavrianopoulos	
	A12	4,945,045	07-31-1990	Forrest et al.	
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	A15	5,002,885	03-26-1991	Stavrianopoulos	
	A16	5,013,831	05-07-1991	Stavrianopoulos	
	A17	5,082,830	01-21-1992	Brakel et al.	
	A18	5,089,112	02-18-1992	Skotheim et al.	
	A19	5,175,269	12-29-1992	Stavrianopoulos	
	A20	5,180,968	01-19-1993	Bruckenstein et al.	
	A21	5,241,060	08-31-1993	Englehardt et al.	
	A22	5,242,828	09-07-1993	Bergstrom et al.	
	A23	5,278,043	01-11-1995	Bannwarth et al.	
	A24	5,312,527	05-17-1994	Mikkelsen et al.	
	A25	5,328,824	07-12-1994	Ward et al.	
	A26	5,356,786	10-18-1994	Heller et al.	
	A27	5,391,272	02-21-1995	O'Daly et al.	
	A28	5,403,451	04-04-1995	Riviello et al.	
	A29	5,436,161	07-25-1995	Bergstrom et al.	
	A30	5,443,701	08-22-1995	Willner et al.	
	A31	5,449,767	09-12-1995	Ward et al.	
	A32	5,472,881	12-05-1995	Beebe et al.	
	A33	5,476,928	12-19-1995	Ward et al.	
	A34	5,552,270	09-03-1996	Khrapko et al.	
✓	A35	5,565,552	10-15-1996	Magda et al.	

Examiner Signature	<i>W. L. W.</i>	Date Considered	8/6/2004
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<i>m</i>	A36	5,571,568	11-05-1989	Ribi et al.	
	A37	5,573,905	11-12-1996	Bannwarth et al.	
	A38	5,591,578	01-07-1997	Meade et al.	
	A39	5,595,908	01-21-1997	Fawcett et al.	
	A40	5,601,982	02-11-1997	Sargent et al.	
	A41	5,603,711	02-18-1997	Parins et al.	
	A42	5,607,646	03-04-1997	Okano et al.	
	A43	5,620,850	04-15-1997	Bamdad et al.	
	A44	5,632,957	05-27-1997	Heller et al.	
	A45	5,700,667	12-23-1997	Marble et al.	
	A46	5,705,348	01-06-1998	Meade et al.	
	A47	5,741,700	04-21-1998	Ershov et al.	
	A48	5,756,050	05-26-1998	Ershov et al.	
	A49	5,770,369	06-23-1998	Meade et al.	
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	A52	5,780,234	07-14-1998	Meade et al.	
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	A61	6,001,087	12-14-1999	Zurcher	
	A62	6,060,023	05-09-2000	Maracas	
	A63	6,060,327	05-09-2000	Keen	
	A64	6,071,699	06-06-2000	Meade et al.	
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	A66	6,090,933*	07-18-2000	Kayyem et al.	
	A67	6,096,273*	08-01-2000	Kayyem et al.	
	A68	6,096,825	08-01-2000	Garnier et al.	
	A69	6,107,080	08-22-2000	Lennox	
	A70	6,177,250	01-23-2001	Meade et al.	

Examiner Signature	<i>m</i>	Date Considered	8/6/2004
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<i>u</i>	A71	6,180,352	01-30-2001	Meade et al.	
	A72	6,200,761	03-13-2001	Meade et al.	
	A73	6,203,758	03-20-2001	Marks et al.	
	A74	6,207,369	03-27-2001	Wohlstadtter et al.	
	A75	6,221,583*	04-24-2001	Kayyem et al.	
	A76	6,232,062*	05-15-2001	Kayyem et al.	
	A77	6,238,870	05-29-2001	Meade et al.	
	A78	6,479,240*	11-12-2002	Kayyem et al.	
	A79	6,495,323*	12-17-2002	Kayyem et al.	
<i>V</i>	A80	6,541,617*	04-01-2003	Bamdad et al.	
	A81	6,600,026*	07-29-2003	Yu	

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Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ² Number ³ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁴
<i>u</i>	B1	CA 2 090904	09-1993			
	B2	DE 197 25 190	12-1998			
	B3	EP 0 229943	07-1987			
	B4	EP 0 234938 (A2)	02-1987			
	B5	EP 0 599337	01-1994			
	B6	EP 0 63879	11-2002			
	B7	EP 0515615	09-1996			
	B8	JP 238,166	1988		Abstract (63-238166)	
	B9	JP 6-41183	02-1994	<i>abstract only</i>		
	B10	WO 85/05815	03-1985			
	B11	WO 90/05732	05-1990			
	B12	WO 92/10757	06-1992			
	B13	WO 93/10267				
	B14	WO 93/22678	11-1993			
	B15	WO 93/23425	11-1993			
<i>V</i>	B16	WO 94/22889	10-1994			

Examiner Signature	<i>Subaru</i>	Date Considered	8/6/2004
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<i>W</i>	B17	WO 95/15971	06-1995			
	B18	WO 96/40712	12-1996			
	B19	WO 96/40712	12-1996			
	B20	WO 97/01646	01-1997			
	B21	WO 97/27329	07-1997			
	B22	WO 97/31256	08-1997			
	B23	WO 97/41425	11-1997			
	B24	WO 97/44651	11-1997			
	B25	WO 98/20162	05-1998			
	B26	WO 98/20162	05-1998			
	B27	WO 98/27229	06-1998			
	B28	WO 98/27229	06-1998			
	B29	WO 98/28444	07-1998			
	B30	WO 98/35232	08-1998			
	B31	WO 98/51823	11-1998			
	B32	WO 98/57159	12-1998			
	B33	WO 98/57319	11-1999			
	B34	WO 99/14596	03-1999			
	B35	WO 99/29711	06-1999			
	B36	WO 99/37819	07-1999			
<i>W</i>	B37	WO 99/67425	12-1999			

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Sheet	5	of	11

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
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W	C1	Affirm VP III, Microbial Identification Test, for In Vitro Diagnostic use, Catalog No. 4406252 (1996).	
	C2	AIZAWA et al., "Integrated Molecular Systems for Biosensors," Sensors and Actuators B, B6S (Nos 1/3) Part 1:1-5 (March 1995).	
	C3	ALBERS et al., "Design of Novel Molecular Wires for Realizing Long-Distance Electron Transfer," Biochemistry and Bienergetics, 42:25-33 (1997).	
	C4	ALLEMAN, K.S. et al., "Electrochemical Rectification at a Monolayer-Modified Electrode," J. Phys. Chem., 100:17050-17058 (1996).	
	C5	ARKIN et al. "Evidence for Photoelectron Transfer Through DNA Intercalation," J. Inorganic Biochem. Abstracts, 6th International Conference on Bioinorganic Chemistry, 51(1) & (2):526 (1993).	
	C6	"Biotechnology and Genetics: Genetic Screening Integrated Circuit," The Economist (February 25-March 3, 1995).	
	C7	BAMDAD, C. "A DNA self-assembled monolayer for the specific attachment of unmodified double - or single stranded DNA," Biophysical Journal, 75:1997-2003 (1998).	
	C8	BARISCI et al., "Conducting Polymer Sensors," TRIP, 4(9):307-311 (1996).	
	C9	BAUM, R. M., "Views on Biological, Long-Range Electron Transfer Stir Debate," C&EN, pp 20-23 (1993).	
	C10	BECHTOLD, R. et al., "Ruthenium-Modified Horse Heart Cytochrome c: Effect of pH and Ligation on the Rate of Intramolecular Electron Transfer between Ruthenium(II) and Heme(III)," J. Phys. Chem., 90(16):3800-3804 (1986).	
	C11	BIDAN, "Electroconducting conjugated polymers: new sensitive matrices to build up chemical or electrochemical sensors. A Review," Sensors and Actuators, B6:45-56 (1992).	
	C12	BLONDER et al., "Three-dimensional Redox-Active layered Composites of Au-Au, Ag-Ag and Au-Ag Colloids," Chem. Commun. 1393-1394 (1998).	
	C13	BOGUSLAVSKY, L. et al., "Applications of redox polymers in biosensors," Solid State Ionics, 60:189-197 (1993).	
	C14	BOWLER, B. E. et al., "Long-Range Electron Transfer in Donor (Spacer) Acceptor Molecules and Proteins," Progress in Inorganic Chemistry: Bioinorganic Chemistry, 38:259-322 (1990).	
	C15	BRODOLIN, K. et al., "Conformational changes in E.Coli RNA Polymerase During Promoter Recognition," Nucleic Acids Research, 24(24):5748-5753 (1993).	
	C16	BRUN, A. M. et al., "Photochemistry of Intercalated Quaternary Diazaaromatic Salts," J. Am. Chem. Soc., 113:8153-8159 (1991).	
	C17	BUMM, et al., "Are Single Molecular Wires Conducting?," Science 271:1705-1707 (1996).	
	C18	CANTOR, C.R. et al., "Report on the Sequencing by Hybridization Workshop," Genomics, 13:1378-1383 (1992).	
	C19	CARR et al., "Novel Electrochemical Sensors for Neutral Molecules," Chem. Commun., 1649-1650 (1997).	
	C20	CARTER et al., "Voltammetric Studies of the Interaction of Metal Chelates with DNA. 2. Tris-Chelated Complexes of Cobalt(III) and Iron(II) with 10-Phenanthroline and 2,2'-Bipyridine," J. Am. Chem. Soc., 111:8901-8911 (1989).	
✓	C21	CHANG, I-JY et al., "High-Driving-Force Electron Transfer in Metalloproteins: Intramolecular Oxidation of Ferrocyclochrome c by Ru(2,2'-bpy) ₂ (im)(His-33) ³⁺ ," J. Am. Chem. Soc., 113:7056-7057 (1991).	

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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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W	C22	CHIDSEY et al., "Coadsorption of Ferrocene-Terminated and Unsubstituted Alkanethiols on Gold" Electroactive Self-Assembled Monolayers," <i>J. Am. Chem. Soc.</i> , 112:4301-4306 (1990).	
	C23	CHIDSEY, C.E.D., et al., "Free Energy and Temperature Dependence of Electron Transfer at the Metal Electrolyte Interface," <i>Science</i> , 251:919-923 (1991).	
	C24	CHRISEY et al., "Covalent attachment of synthetic DNA to self-assembled monolayer films," <i>Nucleic Acids Research</i> , 24(15):3031-3039 (1996).	
	C25	CLERY, "DNA Goes Electric," <i>Science</i> , 267:1270 (1995).	
	C26	<i>Commerce Business Daily Issue</i> of September 26, 1996 PSA#1688.	
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	C28	DAVIS, L. M. et al., "Elements of biosensor construction," <i>Enzyme Microb. Technol.</i> 17:1030-1035 (1995).	
	C29	DEGANI et al., "Direct Electrical Communication between Chemically Modified Enzymes and Metal Electrodes. 2. Methods for Bonding Electron-Transfer Relays to Glucose Oxidase and D-Amino-Acid Oxidase," <i>J. Am. Chem. Soc.</i> 110:2615-2620 (1988).	
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	C33	DREYER, G. B. et al., "Sequence-specific cleavage of single-stranded DNA: Oligodeoxynucleotide-EDTA-Fe(II)," <i>Proc. Natl. Acad. Sci. USA</i> , 82:968-972 (1985).	
	C34	DROBYSHEY, A. et al., "Sequence Analysis by Hybridization with Oligonucleotide Microchip: Identification of β -thalassaemia Mutations," <i>Gene</i> , 188:45-52 (1997).	
	C35	DUBILEY, S. et al., "Fractionation, phosphorylation and ligation on Oligonucleotide Microchips to Enhance Sequencing by Hybridization," <i>Nucleic Acids Research</i> , 25(12):2259-2265 (1997).	
	C36	DURHAM, B. et al., "Electron-Transfer Kinetics of Singly Labeled Ruthenium(II) Polypyridine Cytochrome c Derivatives," <i>Advances in Chemistry Series</i> , 226:181-193 (1990).	
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Examiner Signature	<i>[Signature]</i>	Date Considered	8/6/2004
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			Filing Date	October 29, 2003	
			First Named Inventor	Kayyem	
			Group Art Unit	To Be Assigned	
			Examiner Name	To Be Assigned	
Sheet	7	of	11	Attorney Docket Number	A-674992-2/RFT/RMS/RMK

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<i>m</i>	C42	FOTIN, A. et al., "Parallel Thermodynamic Analysis of Duplexes on Oligodeoxyribonucleotide Microchips," <i>Nucleic Acids Research</i> , 216(6):1515-1521 (1998).	
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<i>u</i>	C63	JOHNSTON et al., "Trans-Dioxorhenium(V)-Mediated Electrocatalytic Oxidation of DNA at Indium Tin-Oxide Electrodes: Voltammetric Detection of DNA Cleavage in Solution," <i>Inorg. Chem.</i> , 33:6388-6390 (1994).	
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<i>u</i>	C83	MILLAN, K.M. and S.R. MIKKELSEN, "Sequence-Selective Biosensor for DNA Based on Electroactive Hybridization Indicators," <i>Anal. Chem.</i> , 65:2317-2323 (1993).	
	C84	MILLAN, K.M. et al., "Covalent Immobilization of DNA onto Glassy Carbon Electrodes," <i>Electroanalysis</i> , 4(10):929-932 (1992).	
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	C91	MURPHY, C. J. et al., "Long-Range Photoinduced Electron Transfer Through a DNA Helix," <i>Science</i> , 262:1025-1029 (1993).	
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<i>✓</i>	C103	RISSE, S. M., et al., "Electron Transfer in DNA: Predictions of Exponential Growth and Decay of Coupling with Donor-Acceptor Distance," <i>J. Am. Chem. Soc.</i> , 115(6):2508-2510 (1993).	

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<i>m</i>	C104	SATO, Y. et al., "Unidirectional Electron Transfer at Self-Assembled Monolayers of 11-Ferrocenyl-1-undecanethiol on Gold," <i>Bull. Chem. Soc. Jpn.</i> , 66(4):1032-1037 (1993).	
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	C112	STORHOFF et al., "One-Pot Colorimetric Differentiation of Polynucleotides with Single Base Imperfections Using Gold Nanoparticles Probes," <i>J. Am. Chem. Soc.</i> , 120:1959-1964 (1998).	
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<i>✓</i>	C122	TURRO, N. et al. "Photoelectron Transfer Between Molecules Adsorbed in Restricted Spaces," <i>Photochem. Convers. Storage Sol. Energy, Proc. Int. Conf.</i> , 8th, pp 121-139 (1990).	

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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	²
<i>u</i>	C123	TURRO, N. J. et al., "Molecular Recognition and Chemistry in Restricted Reaction Spaces. Photophysics and Photoinduced Electron Transfer on the Surfaces of Micelles, Dendrimers, and DNA," <i>Acc. Chem. Res.</i> , 24:332-340 (1991).	
	C124	UOSAKE, K. et al., "A Self-Assembled Monolayer of Ferrocenylalkane Thiols on Gold as an Electron Mediator for the Reduction of Fe(III)-EDTA in Solution," <i>Electrochimica Acta.</i> , 36(11/12):1799-1801 (1991).	
	C125	Vacutainer CPT promotional materials, 8 pages.	
	C126	Vacutainer PPT, Product Circular, 1-8 (1997).	
	C127	VAN NESS, J. et al., "A Versatile Solid Support System for Oligodeoxynucleotide Probe-Based Hybridization Assays," <i>Nucleic Acids Research</i> , 19(12):3345-3349 (1991).	
	C128	VELEV et al., "In Situ Assembly of Colloidal Particles into Miniaturized Biosensors," <i>The ACS Journal of Surfaces and Colloids, Langmuir</i> , 15(11):3693-3698 (1999).	
	C129	WATSON et al., "Hybrid Nanoparticles with Block Copolymer Shell Structures," <i>J. Am. Chem. Soc.</i> , 121:462-463 (1999).	
	C130	WEBER et al., "Voltammetry of Redox-Active Groups Irreversibly Adsorbed onto Electrodes. Treatment Using the Marcus Relation between Rate and Overpotential," <i>Anal. Chem.</i> , 66:3164-3172 (1994).	
	C131	WILLIAMS et al., "Studies of oligonucleotide interactions by hybridisation to arrays: the influence of dangling ends on duplex yield," <i>Nucleic Acids Research</i> , 22(8):1365-1367 (1994).	
	C132	WINKLER, J. R. et al., "Electron Transfer in Ruthenium-Modified Proteins," <i>Chem. Rev.</i> , 92:369-379 (1992).	
	C133	XU et al., "Immobilization and Hybridization of DNA on an Aluminum(III) Alkanebisphosphonate Thin Film with Electrogenenerated Chemiluminescent Detection," <i>J. Am. Chem. Soc.</i> , 117:2627-2631 (1995).	
	C134	XU et al., "Immobilization of DNA on an Aluminum(III) alkanebisphosphonate Thin Film with Electrogenenerated Chemiluminescent Detection," <i>J. Am. Chem. Soc.</i> , 116:8386-8387 (1994).	
	C135	YANG et al., "Growth and Characterization of Metal(II) Alkanebisphosphonate Multilayer Thin Films on Gold Surfaces," <i>J. Am. Chem. Soc.</i> , 115:11855-11862 (1993).	
	C136	YERSHOV, G. et al., "DNA Analysis and Diagnostics on Oligonucleotide Microchips," <i>Proc. Natl. Acad. Sci. USA</i> , 93:4913-4918 (1996).	
✓	C137	ZHOU et al., "Fluorescent Chemosensors Based on Energy Migration in Conjugated Polymers: The Molecular Wire Approach to Increased Sensitivity," <i>J. Am. Chem. Soc.</i> , 117:12593-12602 (1995).	

Examiner Signature	<i>Mike Lee</i>	Date Considered	<i>8/6/2004</i>
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